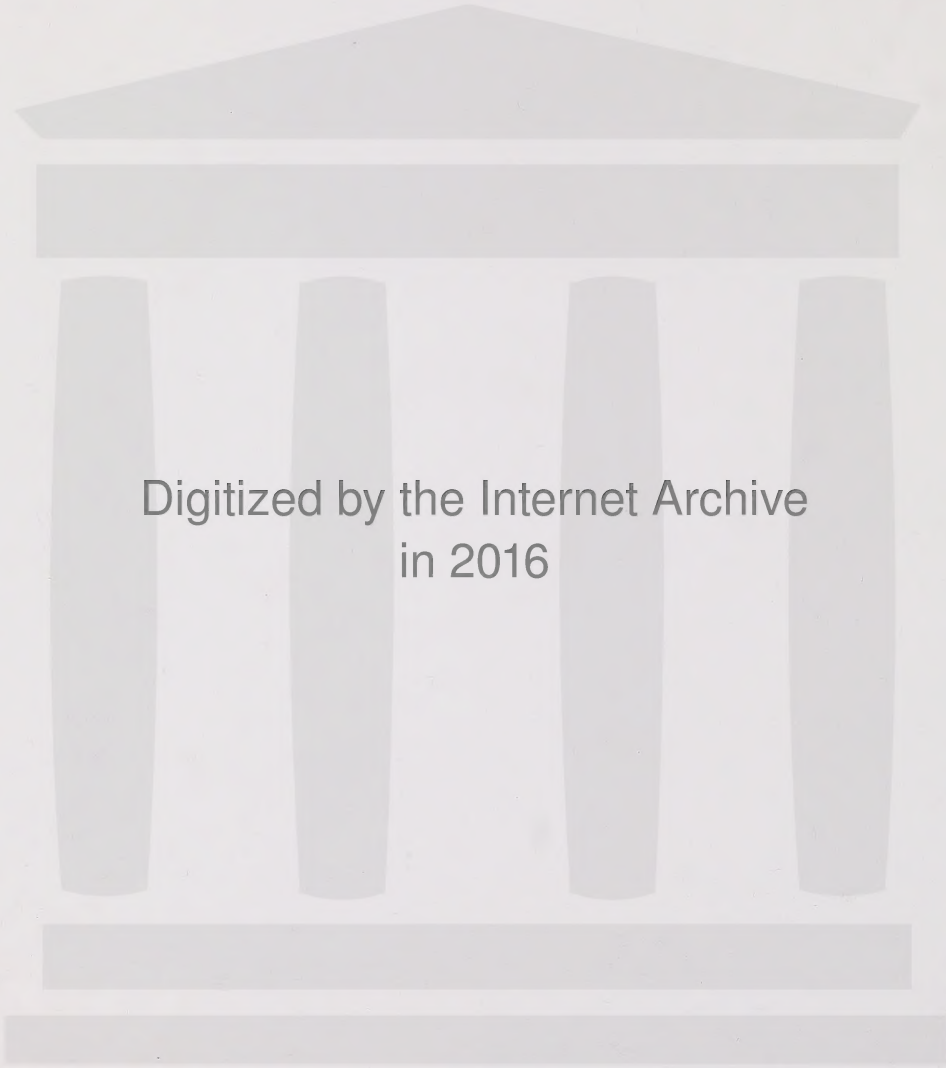
AIDS

HIV/AIDS EDUCATION IN SCHOOLS EVALUATION

GRADE NINE STUDENT PROFILE

SERIES REPORT: 3

Alberta
EDUCATION
HEALTH



HIV/AIDS EDUCATION IN SCHOOLS EVALUATION:

GRADE 9 STUDENT PROFILE

SERIES REPORT: 3

by

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for

Alberta Health

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Introduction

Preparation for the HIV/AIDS Education In Schools Evaluation Project began in the fall of 1988. The research was carried out with the advice of the Working Group on HIV/AIDS Education in the Schools, which included membership from Alberta Health, Alberta Education, schools, health units, and community HIV/AIDS organizations. The project was funded by Alberta Health. The initial design for the project was developed in the fall of 1988, and during 1989 the research design, research questions, sample selection procedures, research instruments with accompanying letters, and project plan were prepared. The data collection was completed in the spring of 1990 by Dr. Lorne Seaman and analysis of the information was conducted by Drs. Munro and Doherty-Poirier in 1991.

The study that provided the data described here is discussed in detail in *HIV/AIDS Education in Schools Evaluation, Research Report: Series Report 1.* Extensive information is provided about what the grade 9 and 11 students who participated in the study had learned and about other aspects of HIV/AIDS education.

In this study, two major research questions were asked:

1) What are the effects of HIV/AIDS instructional strategies on knowledge and attitudes, including intentions about future behaviour, of junior and senior high school students?

2) What are the effects of supporting HIV/AIDS instruction with specific print student learning resources on knowledge and attitudes, including intentions about future behaviour, of junior and senior high school students?

Grades 9 and 11 students who received HIV/AIDS instruction had significantly higher levels of knowledge and more positive attitudes than they did prior to instruction. Their knowledge and attitude scores were also significantly higher than those of students who did not receive instruction. For grade 11 students, receiving HIV/AIDS instruction was also related to a significantly more positive view of their predicted future behaviour. However, the predicted future behaviour of grade 9 students did not change as a result of HIV/AIDS instruction. Possible reasons for this lack of change are discussed in *Report 1.*

In 1992, the report entitled *HIV/AIDS Education in Schools Evaluation: Teacher Profile, Series Report 2* was written with a focus on the information provided by teachers who participated in the study.

This paper provides a detailed profile of the grade 9 students who participated in the study. It covers:

1) Descriptors

2) How informed students think they are about prevention of HIV/AIDS

3) How students rate the job that different sources are doing in informing them about HIV/AIDS and its prevention

4) Where students would first go for help if they thought they had contracted the AIDS virus or another STD

5) Knowledge scores

6) Attitude scores

8) Student perceptions of transmission and prevention of HIV/AIDS

7) Findings regarding condoms

8) Use and evaluation of student print resources

9) Use and evaluation of student audio-visual resources.

Methodology

The procedures and methods for this study are discussed in detail in the research report, *HIV/AIDS Education in Schools Evaluation: Research Report: Series Report: 1.*

The design of the study was quasi-experimental. It consisted of information collected from four groups of students which were: pre-treatment, pre-control, post-treatment, post-control. The pre-treatment and pre-control groups completed pre-test questionnaires, whereas the post-treatment and post-control groups completed post-test questionnaires. The essential difference between the control and treatment groups was the timing of the HIV/AIDS instruction. The treatment group had HIV/AIDS instruction before the post-test and the control group had instruction after the post-test.

Students in the pre-control and pre-treatment groups were assumed for the most part to be the same students as the ones in the post-control and post-treatment groups, as they were in the same classes. However, individual students were not identified either pre or post, to ensure confidentiality.

Throughout this paper, the group of students who are being discussed are the post-treatment students only, unless otherwise indicated.

The sample size is 620 post-control, 1,233 pre-treatment, and 949 post-treatment grade 9 students. There were 65 grade 9 classes.

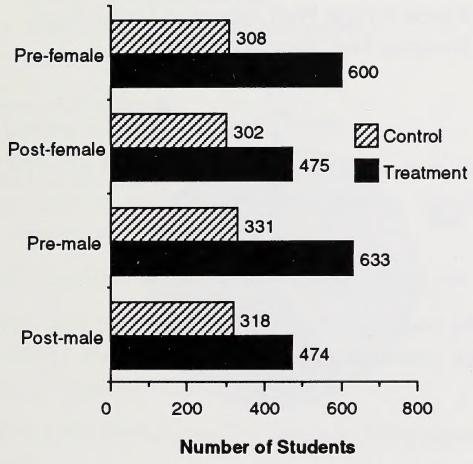
The statistical analyses used were Pearson r correlation, t-tests, one way-analysis of variance, and chi square. The specific test utilized in each analysis is noted in a footnote where appropriate. The alpha level of significant set for the analyses was .05.

Scores on knowledge and attitudes are used in this study. Higher knowledge scores reflect a higher level of knowledge. A higher attitude score reflects more tolerant attitudes towards, for example, people with HIV/AIDS, education on HIV/AIDS and condom use.

Descriptors

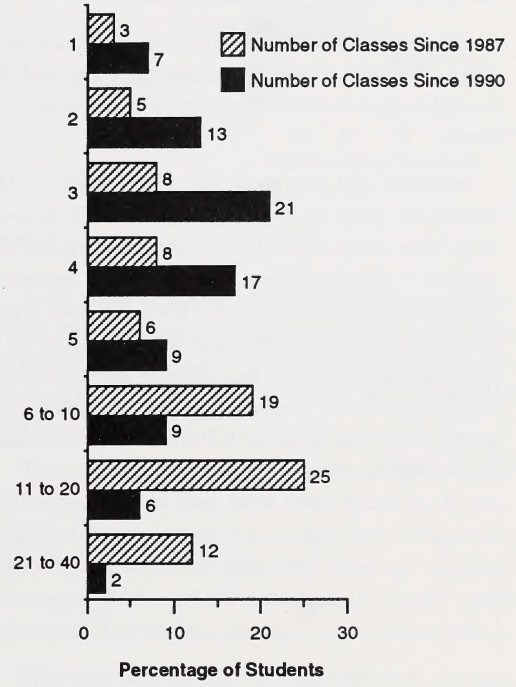
- In the pre-control group, there were 48% female students and 52% male students. The post-control group was made up of 49% females and 51% males.
- There were 49% female and 51% male students in the pre-treatment group and 50% of each of female and male students in the post-treatment group.

Figure 1: Gender Distribution of Grade 9 Students



- The grade 9 students ranged from 13 to 16 years of age.
- 56% of the students came from urban schools (41% metropolitan and 15% urban) and 44% came from rural schools (35% of Alberta junior high students are rural).
- Post-treatment students said that in the last year they had received between 1 and 26 classes on HIV/AIDS.
- Most of the students said that they had received between 2 and 5 classes over the past year on HIV/AIDS.
- Post-treatment students said they had received between 1 and 40 classes on HIV/AIDS over the past two years.
- Most students said they had received between 6 and 10 classes on HIV/AIDS in the past two years, with the mean number of classes being 7.8 classes.

Figure 2: Number of HIV/AIDS Classes Grade 9 Students Have Received Over the Last Year and the Last 2 Years



- After the pre-test and prior to the post-test, a program on HIV/AIDS, "Talkin' About AIDS" was broadcast on national television during prime time. 24% of the post-treatment group and 21% of the post-control group watched the CBC broadcast. This television show was a possible intervening variable in the study.

Discussion

HIV/AIDS instruction was offered in control and treatment classes that had almost identical gender distribution or the same percentage of female and male students. Differences between pre and post numbers of students were the result of classes dropping out of the study and/or routine absences.

Students were drawn from both rural and urban populations. The proportion of students representing the rural population was slightly higher than the proportion in the actual population.

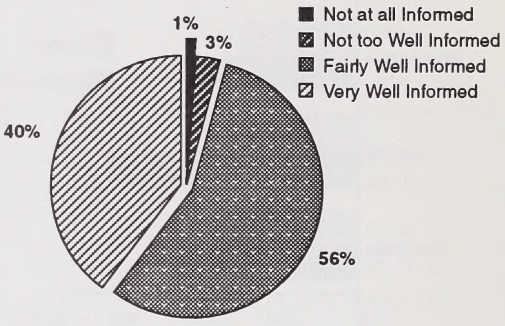
Most of the students in the grade 9 sample were 14 or 15 years of age. These are the ages that one would expect to dominate a sample of grade 9 students.

Students felt that they had received HIV/AIDS education prior to the grade 9 HIV/AIDS instruction. The issue of HIV/AIDS may have been discussed in other courses. However, the estimated number of classes in which HIV/AIDS was a part seems to be inflated by some students (e.g., 30 or more classes). This may be a result of students counting classes in all courses (e.g., social studies, science) where the issue of HIV/AIDS was discussed in passing in relation to relevant issues.

How Informed Students Think They Are About Prevention of HIV/AIDS

- After HIV/AIDS instruction 56% of students felt very well informed and 40% of students felt fairly informed about what they could do to prevent contracting the AIDS virus. Almost all (96%) of the students felt they were fairly or very well informed.
- Less than 1% felt not at all informed and 3% felt not too well informed.

Figure 3: How Well Informed Do Grade 9 Students Feel About HIV/AIDS?



Discussion

It is possible that the small percentage (4%) of the students who felt they were not informed were absent the day(s) that HIV/AIDS instruction was offered or perhaps they didn't feel that the HIV/AIDS issue was relevant for them.

How Students Rate the Job That Different Sources Are Doing in Informing Them About HIV/AIDS and Its Prevention

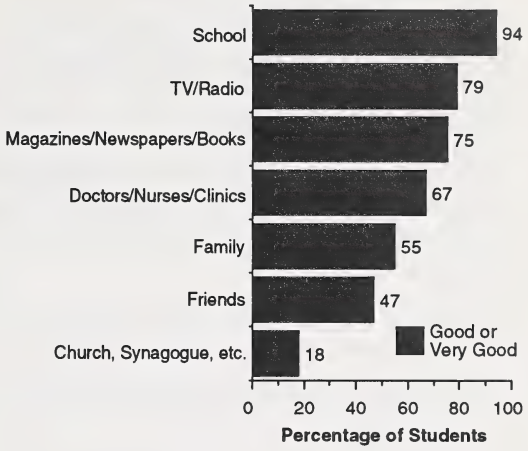
Students were requested to rate how successful different sources were in informing young people about HIV/AIDS, and its prevention. The sources were:

- family
- friends
- church/synagogue/etc.
- school (including resource material)
- doctors/nurses/clinics
- TV/radio
- magazines/newspapers/books

In Figure 4 are illustrated, for each source, the percentage of students rating the "job" as "good" or "very good."

- 94% said that the school was doing a good job.
- 79% said that TV/radio were doing a good job; 75% of the students said that magazines/ papers/books were doing a good job.
- 67% rated doctors/nurses/clinics as doing a good job.
- 55% of students rated family as doing a good job, and 47% rated friends as doing a good job.
- 18% reported that the church/synagogue was doing a good job of informing them of HIV/AIDS and its prevention.

Figure 4: Student Perceptions of the Job Various Sources Do of Informing About HIV/ADS



Discussion

After schools, grade 9 students chose the media, print materials and doctor/nurse/clinics as sources of information about HIV/AIDS. About half of the students saw the family as a "good" or "very good" source.

The success of schools could be related to the following factors that have been found to have a significant[1] impact on the level of knowledge and attitudes of students: inservice training, teaching strategies used, and the student and teacher print resources that the teachers had access to and used.

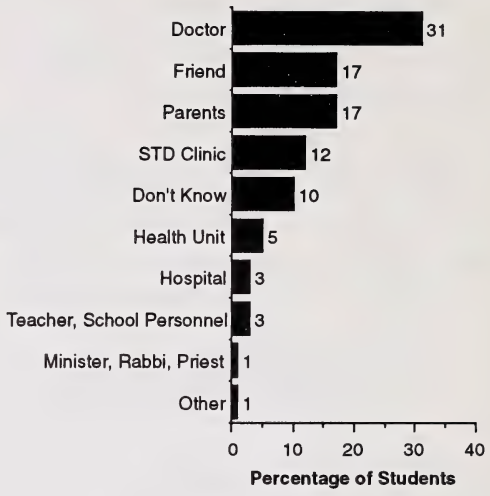
Working partnerships among the seven sources, identified by this study would undoubtedly enhance the HIV/AIDS instruction that students are receiving.

[1] See *HIV/AIDS Education in Schools Evaluation: Research Report, Series Report: 1* and *HIV/AIDS Education in Schools Evaluation: Teacher Profile, Series Report: 2.*

Where Students Would First Go for Help if They Thought They had Contracted the AIDS Virus or Another STD

- 31% of students said they would first go to the doctor if they thought they had contracted the HIV/AIDS virus or another sexually transmitted disease.
- A smaller percentage said they would first go to their parent(s) (17%) or a friend (17%).
- The fourth choice, mentioned by 12% of the students would be an STD Clinic.
- There were 10% who said they did not know who they would contact.
- Very small numbers said the first contact they would make would be the health unit or public health nurse (5%), hospital (3%), teacher or other school personnel (3%), religious leader (1%), and "others" (1%).

Figure 5: Where Students Would First Go for Help if They Thought They Had HIV/AIDS or Another STD



Discussion

The largest number of students said that they would contact a doctor if they thought they had contracted the HIV/AIDS virus or another sexually transmitted disease. This would allow the student to confirm or disprove their suspicions. The students exhibit the ability to differentiate among the roles of various professionals. They have identified the school as a good source of information about HIV/AIDS (educational role), and the doctor as the person from whom to receive medical care.

Interestingly, 10% of the students did not know who they would contact first. This may indicate that the sources of help need to be made more explicit in HIV/AIDS instruction or that students see a number of contact options, and are uncertain which to contact first.

Summary

Males and females were almost equally represented in the control and treatment groups. The grade 9 students in the sample ranged in age from 13 to 16 years of age with most of the students being the expected 14 and 15 years old. While the proportion of rural students in the sample was higher than the proportion of rural students in the general population this difference was not great. The students reported that they had received between 1 and 26 classes on HIV/AIDS in the last year and between 1 and 40 classes over the past 2 years. Some of the high estimates of numbers of classes seem excessive and may or may not be accurate. The majority of students said that they had received between 2 and 5 classes over the past year and between 6 and 10 classes over the past 2 years. These estimates are mostly consistent with what might be expected.

Almost all of the students (96%) felt that they were well informed about prevention of HIV/AIDS. Their feeling that they were informed was valid in that a majority of grade 9 students had a high level of actual knowledge in the area of prevention. Thus the sources from which these students are getting their information must be good. Almost all of the students (94%) thought the school was a good source of information. A majority of students (79%) identified TV/radio as doing a good job. Between 75% and 55% said that magazines/newspapers/books, doctors/nurses/clinics, and family were doing a good job. Less than 50 percent thought friends and the church/synagogue were doing a good job. Based on the levels of these percentages it is apparent that students receive what they perceive to be good information from more than one source. Thus students may receive good information from the school and the family, or the school and any of the other sources of HIV/AIDS information, or from any combination of resources.

It is difficult to know how the students interpreted the question "Where would you first go for help if you thought you had contracted the HIV/AIDS virus or another STD?" They may in actuality think that they would go to several sources. However, the highest percentage seemed to need professional confirmation of their condition. Thus the medically related services (doctor, STD clinic, health Unit, hospital) would be sought out by the highest percentage of students (51%). Ten percent of the students said that they did not know where they would go first. This response may signal the need for further teaching on resource availability or may simply mean that students are uncertain about which of their many sources they would go to first.

HIV/AIDS Knowledge Scores

Based on the curricular materials, the total "knowledge" score of 39 points for students and teachers was comprised of the following areas:

1) Description — "What is HIV/AIDS?"

2) Transmission — "How is HIV/AIDS passed on?"

3) Prevention — "What things prevent the spread of HIV/AIDS?"

4) Riskiness — "What behaviours place an individual at risk of acquiring HIV/AIDS?"

- Grade 9 students had a high level of knowledge about HIV/AIDS prior to receiving instruction on HIV/AIDS. Pre-treatment students had a mean total knowledge score of 29 and post-control students had a score of 29, while post-treatment students had a mean total knowledge score of 32.
- Students who had received HIV/AIDS education had a significantly[2] higher level of knowledge than did students who had not received HIV/AIDS education.
- Significant differences[3] between post-control and post-treatment groups existed in all of the major knowledge areas (description, transmission, prevention, riskiness).
- Transmission — More post-treatment students than post-control students knew that HIV/AIDS could not be transmitted by mosquitoes, through receiving a transfusion, by giving blood, from public toilets, from a swimming pool, but could be transmitted from a mother to her baby during pregnancy.
- Description — More post-treatment students than post-control students knew that a person can carry HIV without symptoms, natural condoms are not more effective than latex and where the term AIDS comes from.
- Prevention — No significant differences existed between post-treatment students and post-control students in the area of prevention.
- Risk — More post-treatment students than post-control students knew that sexual intercourse with a recent acquaintance and having anal intercourse without a condom are risky behaviours that may result in becoming infected. More post-treatment students than post-control students knew that having had two or three different sexual partners, and passionate or deep kissing with no sexual intercourse are somewhat risky situations for becoming infected with the AIDS virus.
- 82% of post-treatment students knew that the name of the virus that causes AIDS is the Human Immunodeficiency Virus. Only 48% of pre-treatment students, and 60% of the post-control group were able to specify the name of the virus.
- There was no significant relationship between the teacher's level of knowledge and attitudes and the students' level of knowledge.

Discussion

Students in the control group had a high level of basic knowledge prior to receiving HIV/AIDS education. It is clear that students had been receiving HIV/AIDS information from other sources. Students indicated that their primary sources of information[4] about HIV/AIDS were the school, and TV and radio. Grade 9 students estimated that they have received between 1 and 40 classes on HIV/AIDS since 1987. Thus it is clear that students are receiving accurate HIV/AIDS information in other school classes, and through TV and radio programs prior to taking the specified HIV/AIDS instruction. However, there are some vital areas where students enter the course with less information (see Table 1). These are the topics that should be targeted during HIV/AIDS instruction.

[2] See *HIV/AIDS Education in Schools Evaluation: Research Report, Series Report: 1.*

[3] *T-tests were conducted between post-control and post-treatment groups on all items. Significance was assessed as p values at the .05 level of significance.*

[4] See *HIV/AIDS Education in Schools Evaluation: Research Report, Series Report: 1.*

Table 1: Percentage of Grade 9 Students and Teachers Answering Knowledge Questions Correctly

	Teacher	Student Post-Control	Student Post-Treatment	Significant Difference[5]
Transmission				
Through food	100	94	97	
From mosquitoes	100	76	92	*
Through receiving a transfusion	38	10	24	*
By giving blood	100	68	79	*
From public toilets	97	87	96	*
From a swimming pool	100	87	96	*
By hugging a person who has AIDS	100	94	97	
By working with someone who is infected with the AIDS virus	100	93	96	
From a woman to a man during sexual intercourse	100	94	97	
From a man to a woman during sexual intercourse	100	98	99	
From a mother to her baby during pregnancy	100	88	97	*
Description				
AIDS interferes with fighting disease	100	95	98	
A person can carry HIV without symptoms	100	88	95	*
HIV infected without detection for months	88	67	62	
AIDS can be cured if treated early	100	91	94	
Gay females and males equally at risk	25	20	17	
Natural condoms more effective than latex	100	73	83	*
Where the term AIDS comes from	100	82	96	*
Prevention				
Abstaining from sexual intercourse	97	87	87	
Having sexual relations with only one person	100	87	89	
Using a condom during sexual intercourse	100	90	90	
Using a spermicide with a condom during vaginal intercourse	93	78	81	
Using Vaseline with a condom during sexual intercourse	73	64	68	
For a woman, using the birth control pill	100	77	76	

cont'd . . .

[5] *T-test comparisons were calculated between post-treatment students and post-control students. Only differences at or beyond the .05 level are identified using *.*

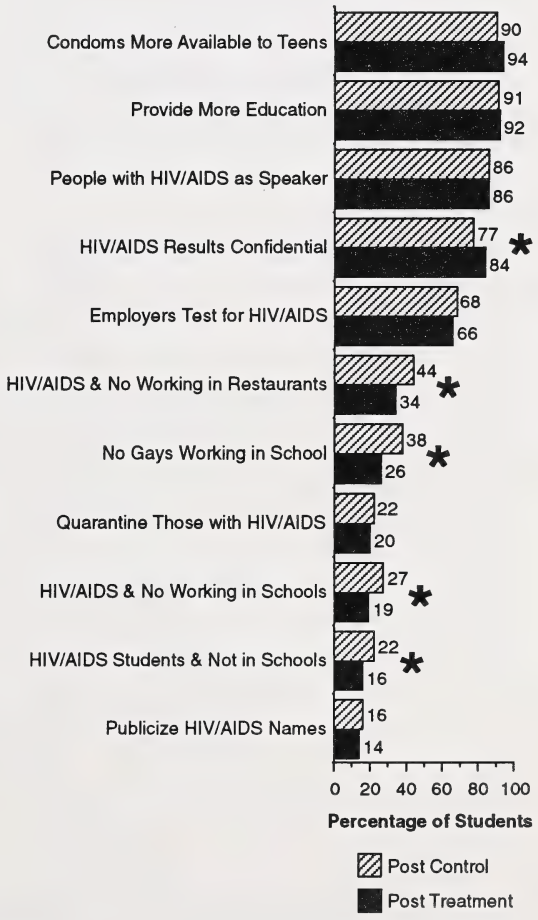
	Teacher	Student Post-Control	Student Post-Treatment	Significant Difference[5]
Abstaining from using drugs intravenously	94	78	81	
Abstaining from sharing needles	100	90	90	
Cleaning needles with bleach if they are shared	46	51	54	
Avoiding crowded public places, like night clubs as not being effective	98	84	84	
Avoiding socializing with gays as not being effective	98	66	69	
Risk — a risky situation for becoming infected with the AIDS virus is				
Sexual intercourse with a recent acquaintance	100	78	82	*
Sexual intercourse with a man who has had sex with another man	100	91	94	
Anal intercourse without a condom	99	87	91	*
Sexual intercourse with an intravenous drug user	100	94	96	
Risk — a somewhat risky situation for becoming infected with the AIDS virus is				
Having had two or three different sexual partners over the past five years	100	81	93	*
Passionate or deep kissing with no sexual intercourse	64	44	53	*
Oral-genital sex without a condom	95	83	83	
Risk — a somewhat safe situation for becoming infected with the AIDS virus is				
Two people who have had sexual intercourse only with each other over the past five years	86	87	87	
Risk — a safe situation for becoming infected with the AIDS virus is				
Abstaining from sexual intercourse over the past five years	100	92	93	
Sexual massage or petting with no sexual intercourse	97	87	84	

[5] *T-test comparisons were calculated between post-treatment students and post-control students. Only differences at or beyond the .05 level are identified using *.*

HIV/AIDS-Related Attitude Scores

- The following attitudes were measured using closed questions with four-category Likert-type scale responses: attitudes towards others with HIV/AIDS, attitudes towards HIV/AIDS education, attitudes towards the use of condoms, and intentions about future behaviour.
- The total possible attitude score was 48.
- The average total attitude score for pre-treatment students was 33.
- The average total attitude score for post-treatment students was 35.
- There was a statistically significant[6] difference between the attitude scores of pre and post-treatment groups.
- Both treatment and control students felt three issues were important, these were: the need for condoms to be made more available to teens (treatment 94%, control 90%), that there is a need to provide HIV/AIDS education (treatment 92%, control 91%), and that people with HIV/AIDS should be brought in as speakers (treatment 86%, control 86%).
- 66% of treatment students and 68% of control students felt that employers should be allowed to test for HIV/AIDS before hiring employees.
- 20% of treatment students and 22% of control students felt that people with HIV/AIDS should be quarantined.
- 14% of treatment students and 16% of control students thought the names of people who are infected with HIV/AIDS should be publicized.
- Significantly more post-treatment students than post-control students felt that HIV/AIDS results should be kept confidential (treatment 84%, control 77%).
- Significantly fewer post-treatment students than post-control students felt that: HIV positive people should be prohibited from working in restaurants (treatment 34%, control 44%), gays should be prohibited from working in schools (treatment 26%, control 38%), people infected with the AIDS virus should be prohibited from working in schools (treatment 19%, control 27%), and that students infected with the AIDS virus should be prohibited from attending school (treatment 16%, control 22%).

Figure 6: Attitudes of Post-Treatment and Post-Control Students on HIV/AIDS Issues[7]



[6] See *HIV/AIDS Education in Schools Evaluation: Research Report, Series Report: 1.*

[7] *T-test comparisons were calculated between post-treatment students and post-control students. Only differences at or beyond the .05 level are identified using *.*

Discussion

Both teachers and students had high levels of tolerant attitudes towards HIV/AIDS. Both groups (the post-treatment and post-control groups) strongly communicated their belief that there is a need for condoms to be made more available to teens, that there is a need to provide HIV/AIDS education, and that people with HIV/AIDS should be brought into the classroom as speakers.

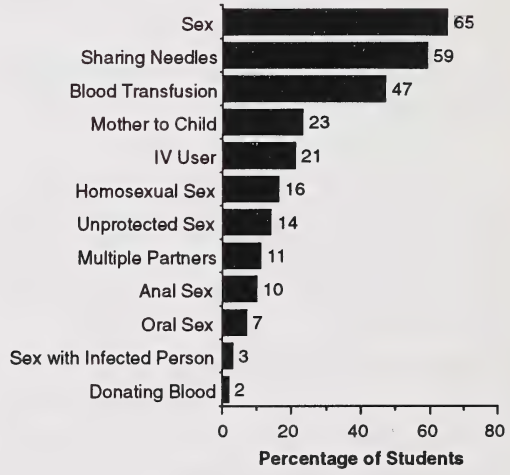
The post-treatment group exhibited a higher level of tolerance of those with HIV/AIDS and gays than did the post-control group. This may be related to the higher level of knowledge of the post-treatment group, as knowledge was highly correlated[8] with attitudes towards HIV/AIDS. That is, students with higher knowledge scores on the post-test had higher attitude scores. Thus, students' enhanced understanding of the facts about HIV/AIDS was related to a more tolerant attitude towards HIV/AIDS.

Student Perception of Transmission and Prevention of HIV/AIDS

Students were asked what they perceived to be common ways that people become infected with the AIDS virus.

- The top three responses to this question were: sex (65%), sharing needles (59%), and blood transfusions (47%).
- Students mentioned several other modes of transmission of HIV/AIDS. These were: mother to child (23%), IV users (21%), homosexual sex (16%), unprotected sex (14%), multiple partners (11%), anal sex (10%), oral sex (7%), and sex with an infected person (3%). A few students incorrectly cited donating blood (2%).

Figure 7: Grade 9 Students' Perceptions of Common Ways that People Become Infected with the HIV/AIDS Virus

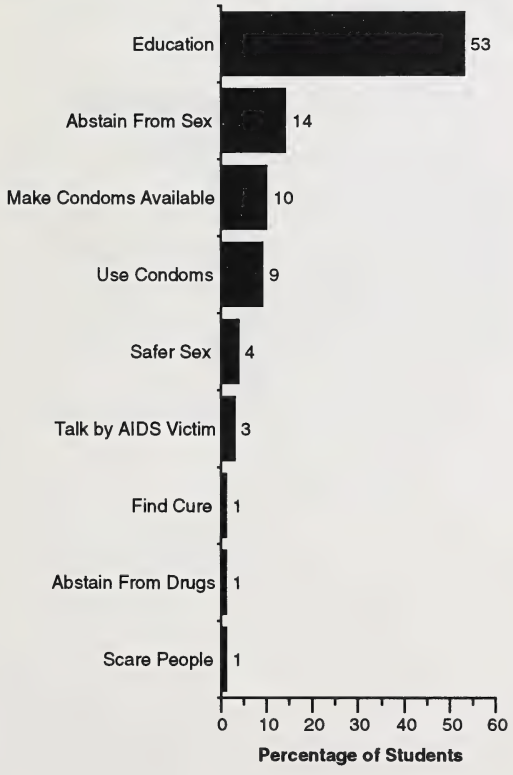


[8] Pearson R correlation was used to test the level of association between knowledge and attitudes (students r=.44 and teacher r=.65). Both were significant at or beyond the .05 level of significance.

Students were also asked what they viewed as most important in helping young people to avoid becoming infected with the AIDS virus.

- 53% of students identified education as most important.
- Several other factors were identified as important to the prevention of HIV/AIDS in young people these were: abstaining from sex (14%), making condoms available (10%), using condoms (9%), safer sex (4%), talks by AIDS victims (3%), finding a cure (1%), abstaining from drug use (1%), and scaring people (1%).

Figure 8: Grade 9 Students' Perceptions of the Single Most Important Thing to Prevent the Spread of HIV/AIDS Among Young People



Discussion

Since the responses in this section were provided by students without prompting in the form of categories to choose from, these questions were also a good test of the accuracy of the students' knowledge.

Students' responses demonstrated high levels of understanding of the common means of HIV/AIDS transmission. However, there was clearly, misunderstanding about donating blood and there may also have been misunderstanding about receiving a blood transfusion. Because of advanced screening procedures, infection as a result of blood transfusions is extremely low in Canada. At the same time the study was carried out, however, the media still interviewed and focused on individuals who had contracted HIV/AIDS through blood transfusions. As we know that grade 9 students see TV as a good source of information, it is possible that this misconception was perpetuated through the media.

On the positive side, students are getting the message that certain behaviours (e.g., unprotected sex and IV drugs) may lead to the contracting of the AIDS virus.

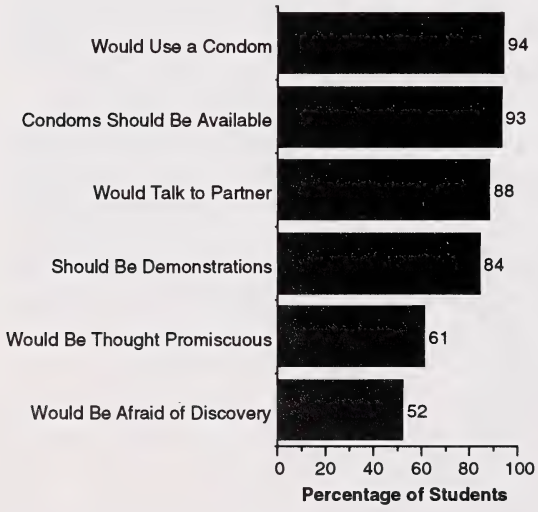
The students overwhelmingly supported the idea that the best way to help young people to avoid becoming infected with the AIDS virus is through education. This was an open-ended question and therefore the choices available to students were unlimited. The next most frequently mentioned deterrents to the spread of HIV/AIDS were: abstaining from sex, making condoms available to students, and using condoms. Other factors mentioned by only a few students, were: safer sex, talks by AIDS victims, finding a cure, abstaining from drug use, and scaring people.

Findings Regarding Condoms

Students were asked questions about their comfort with carrying condoms, their perceived future use of condoms, and reasons why they would not use condoms. It should be noted that since a large number of grade 9 students are not sexually active, many of these issues may not be personally relevant to them.

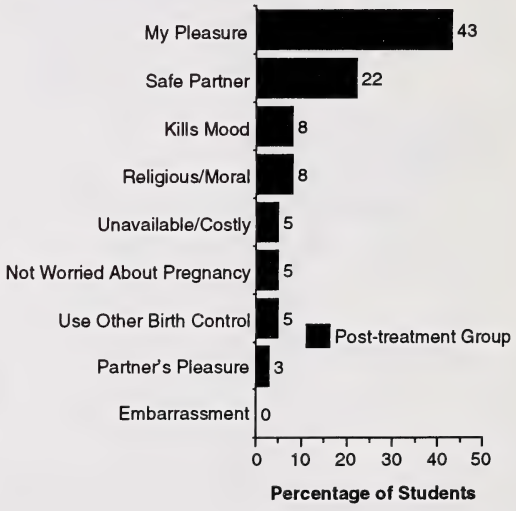
- Carrying condoms is still taboo for more than half of grade 9 students. 61% said that they thought that people would think they were promiscuous if they carried a condom. 52% said they would be afraid of being discovered carrying a condom.
- 93% felt condoms should be made available to students, and that use of condoms should be demonstrated (84%).
- 94% said that they would use a condom if they were to have sex, and 88% said that they would talk to their partners about condom use.

Figure 9: Student Perspectives on Condoms



- Only 57 (6%) of the students said they would not use a condoms.
- 43% of the 57 students said they would not use a condom because of their own pleasure. The second most common reason for not using a condom was that they had a safe partner (22%).
- The least cited reasons for not using condoms were: embarrassment (0%), their partner's pleasure (3%), using another type of birth control (5%), not worried about pregnancy (5%), and condoms unavailable and/or costly (5%).
- Other reasons cited by slightly more but still by a small percentage of students were: religious or moral concerns (8%), and use of condoms kills the mood (8%).

Figure 10: Reasons Why a Small Proportion of Students Would Not Use Condoms



Discussion

Condom use has become an important topic, as has the installation of condom machines in some high schools. Students often experience a stigma attached to carrying condoms but the stigma may be related to attitudes towards sexual behaviour in general at this age.

The students are asking for more information, and for condoms to be accessible. They are saying that they would like to make safe decisions in the future by discussing condom use with their partners, and by using condoms during sexual intercourse. Almost all of the students say they would use a condom. Unfortunately, we do not know how accurate these intentions about future behaviour are. Further study is needed to follow this group to see if their intended future behaviour is consistent with their actual future behaviour.

Frequently, the arguments are made that adolescents do not use condoms because they are embarrassed, or condoms are unavailable or too costly for students. Yet, the small percentage of students in this sample who said they would not use a condom (only 6%) were much more concerned about their own pleasure and the mood. However these students' perspectives may change as they move to the next developmental stage, and as they receive further HIV/AIDS instruction.

Summary

When the post-treatment classes were compared to the pre-treatment groups and post-control groups, the post-treatment group had a significantly higher level of knowledge and attitudes. Post-treatment students had a significantly higher level of knowledge and attitudes than post-control students even on individual items. There was no significant relationship between the teacher's levels of knowledge and attitudes and the student's levels of knowledge and attitudes. These significant differences due to instruction in schools have been found to be related to other factors, including whether the teacher has received inservice training, the teaching strategy used, and the type of resources that are used in the teaching of the students.

Through comparison of control and treatment students, areas were identified where treatment students had significantly more knowledge and more tolerant attitudes than control students. These are areas where the HIV/AIDS education appears to be influencing students, and where continued effort needs to be focused. There were also areas where both groups of students and even the teachers had a low percentage of correct answers. For example, large percentages responded to the following items incorrectly: HIV/AIDS can be transmitted through receiving a blood transfusion; one can be HIV infected without detection for months; gay females and males are equally at risk; if needles are shared they must be cleaned with bleach; socializing with gays will not put you at risk of contracting HIV/AIDS; and passionate or deep kissing with no sexual intercourse puts you somewhat at risk of becoming infected with the HIV/AIDS virus. It is these areas that need to be focused on in order to reduce students' misunderstanding.

Student perceptions of ways one might become infected with the HIV/AIDS virus were for the most part correct. Again there is an indication that students not only feel that they are informed but actually are informed. However, a large percentage still believe that one is at high risk of contracting HIV/AIDS through blood transfusions. Due to more

sensitive testing techniques the risk of contracting HIV/AIDS through a blood transfusion is extremely low. Perhaps as the number of television specials featuring those who have contracted HIV/AIDS through blood transfusions decreases, so may the misunderstanding about HIV/AIDS and blood transfusions.

Students viewed education as by far the best way to prevent the spread of HIV/AIDS among young people. They have obviously benefited from their education and can see the potential of education. Some of the other single factors that students identified as important could be combined as components of HIV/AIDS education. The factors were making condoms available, using condoms, and practising safer sex. These three single factors combined were identified by about one-quarter of the students. A lower percentage identified abstinence as the most important factor. There were other single factors identified by less than 10 percent of students as important to the prevention of the spread of HIV/AIDS.

Almost all (94%) of the students said that they would use condoms, that condoms should be made available, and that they would talk to their partners. Most students (88%) said that they would talk to their partners and (84%) that condoms should be demonstrated. A smaller percentage of students (52 to 61%) said that they are still uncomfortable carrying condoms. Only a very few students, 57 of a possible 949 students, said that they would not use a condom. The major reason given for not using a condom was for their own pleasure. Thus students are at least aware of what "safer sex" is, they plan to protect themselves, and are supportive of the education that they are receiving through their schools in the area of HIV/AIDS.

Use and Evaluation of Student Print Resources

Alberta Health, in consultation with Alberta Education, made student and teacher resources available to support HIV/AIDS instruction in grade 9 Health and Personal Living Skills course. Superintendents were notified that resources were available on request. The student learning print resource was *AIDS: What Young Adults Should Know*. At the time of this study (1987-90), the junior high school Health and Personal Living Skills program was newly developed. In 1987 *AIDS: What Young Adults Should Know* was made available to both grade 9 and 11 students. In the spring of 1988, or in the second year of the project, the same student resource was again made available for grade 9 and 11 students. As well, *AIDS: The Choices and Chances*, was suggested for use at the grade 11 level and also made available at the request of the superintendents for grade 9 students.

Students were asked to evaluate the two print resources. They were asked how good the resource was, how informative, how understandable, how much they learned, and how interesting it was.

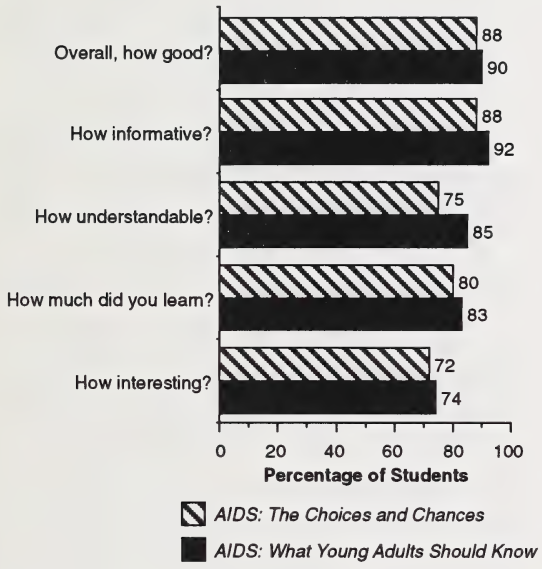
AIDS: What Young Adults Should Know

- *AIDS: What Young Adults Should Know* was rated positively by grade 9 students.
- 90% thought the print resource was good overall, and 92% thought the resource was informative.
- 85% thought the resource was understandable and 83% also thought they had learned from it.
- The fewest students (74%), but still a majority, thought *AIDS: What Young Adults Should Know* was interesting.

AIDS: The Choices and Chances

- *AIDS: The Choices and Chances* was rated positively by grade 9 students.
- 88% thought the print resource was good overall as well as informative.
- 75% thought the resource was understandable and that they had learned from it (80%).
- The fewest students (72%), but still a majority, thought the resource was interesting.

Figure 11: Student Ratings of Print Resources



Discussion

Most of the grade 9 students were favourably impressed by the print resource *AIDS: What Young Adults Should Know*. Teachers also positively evaluated its usefulness.

Perhaps the appeal of this resource to grade 9 students explains the higher levels of knowledge and more tolerant attitudes reported when the resource was seen, read or used.[9]

The majority of the grade 9 students were favourably impressed by *AIDS: The Choices and Chances* but they did not rate it quite as highly as *AIDS: What Young Adults Should Know*. Teachers thought the resource was useful.

Seeing, reading or using[10] *AIDS: What Young Adults Should Know* or the combination of both the resources, *AIDS: What Young Adults Should Know* and *AIDS: The Choices and Chances*, were associated with higher levels of knowledge and more tolerant attitudes.

As can be seen from Figure 11, *AIDS: What Young Adults Should Know*, the resource recommended for grade 9, received slightly higher ratings in all categories than *AIDS: The Choices and Chances*. The latter was made available for but not specifically recommended for grade 9.

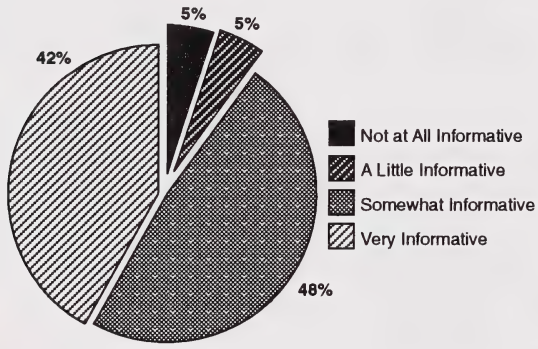
[9] For more details on what relationships are significant please see *HIV/AIDS Education in Schools Evaluation: Research Report, Series Report: 1.*

[10] For more details on what relationships are significant please see *HIV/AIDS Education in Schools Evaluation: Research Report, Series Report: 1.*

Use and Evaluation of Student Audio-Visual Resources

- 67% of grade 9 students said they were part of classes where audio-visual resources were used (e.g., films, videos).
- only 5% of students thought that audio-visual resources were not at all informative and 5% thought they were only a little informative.
- 48% of students thought audio-visual resources were somewhat informative and 42% thought they were very informative.

Figure 12: According to Grade 9 Students, How Informative are Audio-Visual Resources



Discussion

According to students, a majority of teachers are using audio-visual resources. Almost all of the students thought the resources were either somewhat informative or very informative.

Because of the prevalence of TV within our society, students tend to be visually oriented. This may explain why such a high percentage (90%) found audio-visual resources informative.

Summary

Grade 9 students evaluated both of the print resources that were available to them very highly. They thought they were good overall, informative, understandable, and that they had learned from them. A slightly lower and yet still high percentage (more than 72 to 74%) of the students reported that the print resources were interesting. Grade 9 teachers also thought these print resources were useful.

In addition, higher levels of student knowledge and attitudes were found to be associated with the use of these print resources in the classroom. Therefore, print resources of this type are enjoyed by and beneficial to grade 9 students and, thus, should be continued.

Teachers are also using audio-visual resources to good effect. A majority of students found the audio-visual resources to be informative.

Conclusion

Students in this sample exhibited a high level of knowledge prior to taking the classes on HIV/AIDS and significantly more knowledge and more tolerant attitudes after instruction in the area of HIV/AIDS. Analyses have been reported in other papers in the series[11] to determine what factors are related to this gain in knowledge and tolerant attitudes.

These areas of knowledge were assessed: transmission, description, prevention, and risk. Control and pre-treatment groups had a high level of knowledge in the area of prevention. However, there were several topics where even after HIV/AIDS instruction the students still had relatively low levels of knowledge. For example, some of the problem topics were: the level of risk associated with blood transfusions, socializing with gays, risk for male compared to female gays, cleaning needles with bleach, deep kissing, a person being HIV infected without detection, and information on the appropriateness of use of condoms with spermicide or vaseline.

Thus, the objective evaluation showed that students have a high level of knowledge and tolerant attitudes. In addition the students feel comfortable with their level of knowledge about HIV/AIDS.

The grade 9 students reported that many of their sources of information about HIV/AIDS, especially the school, are doing a good job. Other sources described by students as doing a good job were: TV/radio, magazines/newspapers/books, and doctors/nurses/clinics. The sources identified less often as doing a good job were family and friends. A few students reported that the church/synagogue was doing a good job of informing them about HIV/AIDS and its prevention.

However, this picture changed when students are asked where they would go first for help if they thought they had contracted the HIV/AIDS virus or another STD. The largest percentage said that they would go to see the doctor first; the next largest percentage would go to see friends or family. Very few students would go to school personnel first.

These findings may be related to realistic perceptions of roles. The role of the school, health units, and print, audio and visual resources seems to be educational or preventative; while doctors, family, and friends would be the support agents if HIV/AIDS or STD were contracted.

A small proportion of students did not know who they would go to see first if they thought they had HIV/AIDS or another STD. These students may have been unaware of the resources available to them or unable to say which of their several resources they would go to see first. In either case, there is a need to assist students in the identification and understanding of available resources in order to enable them to make informed decisions.

Students predicted that they would be sexually responsible in the future by using condoms. The reasons students gave for not choosing to use a condom were more related to personal feelings and their trust in their partner than to the lack of access.

The audio-visual and print resources that teachers have available to them are having a positive impact on the knowledge and attitudes of our grade 9 students in the area of HIV/AIDS education.

The students viewed the print resources positively. However, the lowest rating was on how interesting the print resource was. Future print resources could be designed similar to the present print resources, but incorporating techniques that have been found to capture the attention of adolescents.

Overall, considering the findings of the study, clearly large strides have been made in educating students about HIV/AIDS, despite the fact that AIDS had only been identified six years prior to data collection for the project. Whether this knowledge and these attitudes lead to students making responsible personal choices is an area for future research.

[11] For more details on what relationships are significant please see *HIV/AIDS Education in Schools Evaluation: Research Report* and *Paper 2: HIV/AIDS Teacher Report*.

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